

## Abstract

There are disclosed a process for producing a solid catalyst component and a catalyst for  $\alpha$ -olefin polymerization, and a process for producing an  $\alpha$ -olefin polymer, wherein the process for producing a solid catalyst component comprises the steps of:

(1) reducing a specific titanium compound with an organomagnesium compound in the presence of an organosilicon compound having a Si-O bond (and an ester compound) , thereby obtaining a solid product, and

(2) contacting the solid product with a halogeno compound of the 14 group element, at least one member selected from the group consisting of an electron donor compound and an organic acid halide, and a compound having a Ti-halogen bond, thereby obtaining the solid catalyst component.